

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 79-19

NPDES NO. CA0037532

WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF MILLBRAE
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The City of Millbrae, hereinafter called the discharger, by application dated December 19, 1978, has applied for renewal of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System.
2. The discharger presently discharges secondarily treated municipal wastewater containing pollutants into a combined outfall force main with final disposal into San Francisco Bay, a water of the United States, at a point approximately one mile north-east of Point San Bruno, (Latitude 22 deg, 39 min, 55 sec; Longitude 22 deg, 21 min, 41 sec). The discharge can affect viable shellfish beds in San Francisco Bay, located near the shoreline of Oyster Point and Point San Bruno. The same outfall facilities are presently used by Merck Chemical Company, San Francisco International Airport, and the cities of South San Francisco and Burlingame.
3. The report of waste discharge describes the existing discharge as follows (Annual Average values):

Average Flow: 2.0 million gallons per day (mgd)
Design Flow: 3.0 million gallons per day (mgd)

<u>Constituents</u>	<u>Milligrams per Liter</u>	<u>Pounds per day</u>
BOD	13	220
Suspended Matter	20	330
Oil & Grease	3.5	58

4. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board on April 8, 1975. The Basin Plan contains water quality objectives for San Francisco Bay.

5. The beneficial uses of San Francisco Bay are:
 - a. Recreation
 - b. Fish migration and habitat
 - c. Habitat and resting for waterfowl and migratory birds
 - d. Industrial, water supply
 - e. Esthetic enjoyment
 - f. Navigation
 - g. Shellfish propagation and harvesting for human consumption
6. This project is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
7. The discharge is presently governed by Waste Discharge Requirements Order Nos. 74-20, 76-27, and 77-26 which allow discharge to San Francisco Bay.
8. The discharger and interested agencies and persons have been notified of the Board's intent to revise requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.
9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provision of the Federal Water Pollution Control Act, as amended, and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

A. Prohibitions:

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.
2. There shall be no bypass or overflow of untreated wastewater to waters of the State either at the treatment plant or from the collection system.
3. The average dry weather flow shall not exceed 3.0 mgd. Average shall be determined over three consecutive months each year.

B. Effluent Limitations for Discharge into the Combined Outfall:

1. Effluent discharged shall not exceed the following limits.

<u>Constituents</u>	<u>Units</u>	<u>30-day Average</u>	<u>7-day Average</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
a. Settleable Matter	ml/l-hr	0.1			0.2
b. BOD	lbs/day	751	1126	1501	
	(kg/day)	(340)	(511)	(681)	
	mg/l	30	45	60	
c. Suspended Solids	lbs/day	751	1126	1501	
	(kg/day)	(340)	(511)	(681)	
	mg/l	30	45	60	
d. Grease & Oil	lbs/day	250		500	
	(kg/day)	(113.5)		(227)	
	mg/l	10		20	
e. Chlorine Residual*	mg/l				0.0

*Compliance with this limitation may be demonstrated at the point of discharge from the combined outfall to the receiving water.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).
3. The pH of the discharge shall not exceed 9.0 or be less than 6.0.
4. In any representative set of samples, the waste as discharged to the combined outfall shall meet the following limit on toxicity:**

The survival of test fishes in 96-hour bioassays of the effluent shall be a 90 percentile value of not less than 50 percent survival. Exceptions to this limitation may be granted and revised toxicity requirements established by the Regional Board, pursuant to public hearing, if the discharger can demonstrate to the satisfaction of the Board that the following conditions are met:

1. The waste is discharged through a deepwater outfall which achieves rapid and high initial dilution and that the waste is rapidly rendered nonacutely toxic upon discharge, and
2. The toxicants in the waste are nonconservative constituents which are rapidly decayed in the receiving water; or the toxicants in the waste are conservative constituents for which water quality objectives have been established. The Regional Board will, in such cases, establish effluent mass emission rates for such constituents.

**Samples may be dechlorinated in the laboratory prior to testing to provide a chlorine residual equal to that of the waste in the combined outfall.

5. Representative samples of the effluent shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Unit of Measurement</u>	<u>50% of Time</u>	<u>10% of Time</u>
Arsenic	mg/l (kg/day)	0.01 (.11)	0.02 (.23)
Cadmium	mg/l (kg/day)	0.02 (.23)	0.03 (.34)
Total Chromium	mg/l (kg/day)	0.005 (.06)	0.01 (.11)
Copper	mg/l (kg/day)	0.2 (2.27)	0.3 (3.41)
Lead	mg/l (kg/day)	0.1 (1.14)	0.2 (2.27)
Mercury	mg/l (kg/day)	0.001 (.01)	0.002 (.023)
Nickel	mg/l (kg/day)	0.1 (1.14)	0.2 (2.27)
Silver	mg/l (kg/day)	0.02 (.23)	0.04 (.454)
Zinc	mg/l (kg/day)	0.3 (3.41)	0.5 (5.68)
Cyanide	mg/l (kg/day)	0.1 (1.14)	0.2 (2.27)
Phenolic Compounds	mg/l (kg/day)	0.5 (5.68)	1.0 (11.4)
Total Identifiable Chlorinated Hydrocarbons ^{1/}	mg/l (kg/day)	0.002 (.023)	0.004 (.045)

^{1/}Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

C. Receiving Water Limitations:

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place.
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

- | | | |
|----|--------------------------|--|
| a. | Dissolved oxygen | 5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen. |
| b. | Dissolved sulfide | 0.1 mg/l maximum |
| c. | pH | Variation from natural ambient pH by more than 0.2 pH units. |
| d. | Un-ionized ammonia | 0.025 mg/l as N Annual Median
0.4 mg/l as N Maximum |
| e. | Total Coliform organisms | 240 MPN/100 ml, median of five consecutive samples maximum 10,000 MPN/100 ml, any single sample, maximum. |

D. Provisions:

1. The requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 74-20, 76-27, and 77-36, adopted by the Board on March 19, 1974, March 16, 1976, and April 19, 1977. Order Nos. 74-20, 76-27, and 77-36 are hereby rescinded.
2. The discharger shall comply with all effluent and receiving water limitations, prohibitions, and provisions of this Order immediately upon adoption.
3. If the discharger elects to document compliance with the coliform receiving water limitation exclusively in the effluent and so notifies the Board, in writing, the frequency of receiving water coliform monitoring will be reduced accordingly; PROVIDED HOWEVER, that if such election is made, a violation of the coliform requirement in the effluent shall constitute a violation of the coliform receiving water limitation.
4. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.
5. Subsequent to evaluation of receiving water monitoring data and dilution conditions, this Board will review the adequacy of these requirements to protect shellfish and consider adoption of more stringent limitations, if necessary, to protect shellfish harvesting for human consumption.
6. The discharger shall comply with the attached Self-Monitoring Program as ordered by the Executive Officer.
7. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions," dated April 1977.

8. This Order expires February 20, 1984. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
9. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1979.

FRED H. DIERKER
Executive Officer

Attachement:

Standard Provisions, Reporting Requirements
& Definitions dated April 1977

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

City of Millbrae

San Mateo County

NPDES NO. CA 0037532

ORDER NO. 79-19

CONSISTS OF

PART A, dated 7/74

AND

PART B

AND

Bottom Sediment Sampling and Reporting Guidelines, dated 9/4/74

City of Millbrae

PART B

I. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

A. INFLUENT AND INTAKE

<u>Station</u>	<u>Description</u>
A-1	At any point in the treatment facilities' headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the outfall from the treatment facilities between the point of discharge into the combined outfall and the point at which all waste tributary to that outfall is present. (May be the same as E-001-D.)
E-001-D	At any point in the disinfection facilities for Waste E-001 at which point adequate contact with the disinfectant is assured. May be in the South San Francisco - San Bruno joint outfall.

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-1	At a point in San Francisco Bay located over the geometric center of the outfall's discharge ports.
C-2	At a point in San Francisco Bay located midway between C-1 and C-3.
C-3	At a point in San Francisco Bay located in the center of the waste plume.
C-50-SW	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.
C-50-NW	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-50-NE	At a point in San Francisco Bay located 50 feet northeasterly from Station C-1, along the outfall line extended.
C-50-SE	At a point in San Francisco Bay located 50 feet southeasterly from station C-1, normal to the outfall.

C-300-N thru C-300-NW (8 Stations)	At a point in San Francisco Bay located on a 300-foot radius from the geometric center of the outfall diffuser, at equidistant intervals, with Station C-300-SW located shoreward from Station C-1 at the outfall line.
C-R-NW	At a point in San Francisco Bay located approximately 1500 feet northerly from the point of discharge
C-R-SE	At a point in San Francisco Bay, located approximately 1500 feet southeasterly from the point of discharge.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fence line surrounding the washwater treatment facilities. (A sketch showing the locations of these stations will accompany each report.)

E. BOTTOM SEDIMENTS

<u>Station</u>	<u>Description</u>
B-1	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-2	At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-3	At a point in San Francisco Bay located three hundred (300) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-4	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.

- B-5 At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.
- B-RS At a point in San Francisco Bay located approximately fifteen hundred (1500) feet south of the center of the diffuser.

F. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
O-1 thru O-'n'	Bypass or overflows from manholes, pump stations or collection system.

Note: Initial SMP report to include map and description of each known bypass or overflow location.

Reporting - Shall be submitted monthly and include date, time, and period of each overflow or bypass.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

III. NON-APPLICABLE SECTIONS OF PART A

Does not include the following paragraphs of Part A:

C-3, C-5:d

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board NPDES Permit No. CA0037532, Order No. 79-19.
2. Has been ordered by the Executive Officer on February 20, 1979, and becomes effective immediately.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

Attachment:
Table I

Fred H. Dierker
Executive Officer

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

[illegible]

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001-D			All Sta _C	All Sta _P	All Sta _B	All Sta _O		
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont	G	O	BS	O		
Mercury (mg/l & kg/day)			3M										
Nickel (mg/l & kg/day)			3M										
Zinc (mg/l & kg/day)			3M										
PHENOLIC COMPOUNDS (mg/l & kg/day)			3M										
All Applicable Standard Observations		D						2/M	2/W		E		
Bottom Sediment Analyses and Observations										Y			
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)			3M										
Non Dissociated Ammonium Hydroxide as N (mg/l)								3/ 2/M					

LEGEND FOR TABLE

TYPES OF SAMPLES

C = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurrence
 H = once each hour
 D = once each day
 W = once each week
 M = once each month
 Y = once each year

2/H = twice per hour
 2/W = 2 days per week
 5/W = 5 days per week
 2/M = 2 days per month
 2/Y = once in March and
 once in September
 Q = quarterly, once in
 March, June, Sept.
 and December

2H = every 2 hours
 2D = every 2 days
 2W = every 2 weeks
 3M = every 3 months
 Cont = continuous

FOOTNOTES

1/ During any day when bypassing occurs from any treatment unit(s) in the plant, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses:

- a. Composite sample for BOD, Total suspended solids, oil and grease (Influent & Effluent)
- b. Grab sample for Coliform (Total and Fecal), Settleable matter, and
- c. Continuous monitoring of flow.

2/ 5 samples per station each sampling day.

3/ Stations C-1, 2, 3, CR-NW, CR-SE only.

4/ Oil and grease sampling shall consist of 3 grab samples taken at equal hour intervals during the sampling day, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values, based upon this instantaneous flow rates at the time each grab sample was collected.

BOTTOM SEDIMENT SAMPLING AND REPORTING GUIDELINES

For macroinvertebrate samples the following equipment and procedures shall be observed:

1. The benthic grab sampler employed shall be one of the following: Ponar, Peterson, Smith-McIntyre or 12 x 12 Ekman (when all sampling stations are in shallow water and sediment composition is ooze throughout sampling area). A core sampler may be employed if special conditions warrant but approval is necessary from the Regional Board.
2. Each benthic grab (replicate) shall be reasonably uniform; that is, 6 to 8 liters of sediment per grab. In the field, each grab sample shall be screened using a 30 mesh sieve and preserved in 5% formalin. Sediment characteristics shall be recorded for each grab. Pertinent collection data shall be placed on internal and external labels for all grabs preserved.
3. In the laboratory, all grabs preserved in the field shall be transferred into 70% ethanol within a week. When large numbers of organisms are present, subsampling may be employed. The sample should be thoroughly mixed and distributed over a shallow pan. A divider (i.e., equal quarters) is placed in the pan. The aliquot to be used, regardless of the number of organisms, should never be smaller than one-quarter of the grab sample. Generally, it will be necessary to count all of the organisms in no less than three liters of the sediment collected in each grab sample. When subsampling is not employed during the first sampling period of the year, because of the low number of organisms in the benthos, then subsampling should not be conducted in the other sampling periods for that year if at all possible. If very large numbers of organisms are present in future samples, then subsampling may be conducted; but the subsample should never be smaller than one-half of the grab sample. The methodology used should be consistent and should be guided by expert professional judgment. That part of the sample not selected for sorting shall be saved for future reference as well as those specimens sorted. Aliquot sampling, although not the most desirable alternative, is preferable to compositing all grab samples. The subsampling prescribed should provide for some reduced costs to the discharger.

Reporting Procedures for Benthic Macroinvertebrates

All reports shall include the following:

1. Number of invertebrates per square meter and per liter of sediment of each grab sample and the mean number of invertebrates per square meter and per liter of sediment per station. The actual number of individuals counted in each grab sample and the actual volume of sediment collected in the grab sample shall be listed.
2. Identification of polychaetes, amphipods, and molluscs to species and enumeration of each species for each grab sample.

3. For each station, provide the mean number of individuals per square meter for each discernible species* obtained from the individual grab samples.
4. For each station, provide the range in numbers of individuals for each discernible species* obtained from the separate grab samples.
5. List total oligochaetes per square meter and per liter of sediment for each grab sample and the mean numbers for each station.

Annual Reports shall include in addition to the above:

1. Discussion of presence or absence and relative abundance of pollutant tolerant and/or intolerant species.
2. Analysis and discussion on impact of discharge on benthic community in vicinity of outfall.
3. Graphical presentation of results should accompany the discussion of (1) and (2) above.
4. Discharger shall be required to submit (2) two copies of the Annual Summary to the Regional Board.

*Discernible species means a species identified or recognized as such in the following major groups: polychaetes, amphipods and molluscs.